#CA92006

**TO:** Director, National Institute for Occupational Safety and Health

**FROM:** California Fatal Assessment & Control Evaluation Program

**SUBJECT:** Construction laborer electrocuted by energized crane in California

## SUMMARY

**California FACE Report #CA92006**
**April 15, 1993**

A 26-year-old Hispanic male construction laborer (victim) was electrocuted when he tripped and came into contact with an energized crane. The victim was in the process of carrying a wire rope over to be used to attach a pile of plywood to the crane's hook. The commotion created by the victim behind the crane, startled the crane operator thus allowing the boom to make contact with a high voltage powerline. CPR was immediately administered by co-workers until paramedics arrived. The FACE investigator concluded that, in order to prevent future similar occurrences, employers should:

* make employees aware of the hazards at the worksite
* employers should provide information which informs their employees of what kinds of hazards to look for and how to avoid them.

* develop and implement strict procedures when working with a crane in the vicinity of high voltage power lines.

* contact the local electric power company and have the power turned off when working within a certain distance of high voltage power lines.

**INTRODUCTION**

On May 12, 1992, a 26-year-old Hispanic male construction laborer was electrocuted when he tripped and brushed against a crane, which had become energized due to contact with a high voltage power line. The FACE investigator was informed of the incident by the California Occupational Safety & Health Administration's (Cal/OSHA) office. The FACE investigator went to the incident on May 13, 1992 and took photographs and conducted interviews with the three employers working at the site. The employers included the crane operator, the framing contractor (subcontractor), and the general contractor.

They had all worked together in the past on numerous occasions. There were also two employees (laborers) working for the subcontractor and one employee (laborer) who worked for the crane operator. The only one not present during the incident was the general contractor. The other men all witnessed, or were near vicinity when the incident occurred.

The victim was working for the subcontractor in this incident. He had worked with his employer for two months prior to the incident. The subcontractor had been in the construction business for 7 years. He had numerous safety rules for his employees, but he was not aware of the Illness & Injury Prevention Plan, which was required by the State of California.

**INVESTIGATION**

On the day of the incident, the crane operator had been hired to lift "glue lam" beams (the center support beams for a roof) onto the second story of a residential structure. After all of

the beams had been lifted the crane operator was asked by the subcontractor to help lift some plywood to the second story, thus using up the remaining time in his contract. The subcontractor and the crane operator worked together in positioning the crane. To balance the crane, the crane had been set on rubber tires rather than outriggers. Both employers stated that they were aware of the telephone and high voltage lines. Earlier that same afternoon the crane had brushed against the telephone lines and had to be repositioned.

The victim's job on the day of the incident had been to assist the crane operator in lifting the plywood to the second story of the residence. This job was not part of a general routine for the victim, but was not considered to be outside of what was normally required under his general job description. Prior to the incident the victim had gone behind the crane to get a wore rope to secure a pile of plywood to the crane's hook. The other workers were located in different positions (crane operator on the crane, subcontractor near the plywood, and victim's co-workers on the second story of the structure) around the site.

At the time of the incident (2:30 pm) the sun was at an angle where it obstructed the crane operator's vision, of the high voltage lines. Neither the crane operator nor the subcontractor checked, or asked anyone else to check the position of the crane boom prior to the incident. The auxiliary line of the crane made contact with the high voltage line. The main hoist line was being used to attempt the lift. When contact was made, the auxiliary line was burned into and the ball/hook assembly fell to the

ground. Voltage was 16,000 volts line to line. The victim was carrying a wire rope between the crane's south west corner bumper and a wooden access ramp that was laying up against the framed structure. His activity startled the crane operator and the boom drifted contacting the high voltage line, simultaneously the victim tripped and brushed against the corner of the crane. His contact with the crane completed the circuit of 16,000 volt to ground (the crane was on rubber tires which were being used for only for leveling support, setting on 2" X 10" slats).

CPR was immediately, administered by a co-worker. The co-worker stated that the victim stood up after the incident and then fell on his face. Paramedics arrived within five minutes of the incident and the victim was transported to the hospital where he was pronounced dead at 3:10 pm.

**CAUSE OF DEATH**

The Coroner's Autopsy Report stated the cause of death as cardiopulmonary arrest secondary only to electric shock.

**RECOMMENDATION/DISCUSSION**

**Recommendation #1: Employers should inform employees about the types of hazards at a worksite. Information should be provided which informs employees about such hazards and the means to avoid them.**

Discussion: Employers should under Title 8 of the California Code of Regulations (CCRs) section 1509 (a) have an Illness & Injury Prevention Plan.

**Recommendation #2: Employers should develop and implement srtict procedures when working with a crane in the vicinity of a high voltage wires.**

Discussion: Employers should under Title 8 of the CCRs section 2946 (b)(3) not operate a crane within 10 feet of a high voltage power lines.

**Recommendation #3: Employers should contact the local electric company and have the power turned off when working within a certain distance of high voltage power lines.**